Coastal Protection and Restoration Authority of Louisiana

Office of Coastal Protection and Restoration

2008 Annual Inspection Report

for

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)

State Project Number TE-28
Priority Project List 3

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Terrebonne Parish

Prepared by:

Brian Babin, P.E.
CPRA/ Office of Coastal Protection and Restoration
Thibodaux Field Office
1440 Tiger Drive, Suite B

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I. Introduction

The Brady Canal Hydrologic Restoration Project consists of 7,653 acres located in the Terrebonne Basin, within the Bayou Penchant - Lake Penchant watershed in Terrebonne Parish, Louisiana. The project is bounded by the Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou Decade and Turtle Bayou to the south, Superior canal to the east, and Little Carencro Bayou and Voss Canal to the west (Appendix A – Project Features Map).

The Brady Canal Project is a hydrologic restoration project consisting of the installation and maintenance of a fixed crest weir with barge bay, a rock plug, several variable crest weir structures, earthen embankments and overflow banks, rock dikes, rock armored earthen embankments and rock armored channel liners. These structures were designed to reduce the adverse tidal affects and saltwater intrusion in the project area and to promote freshwater introduction to better utilize available freshwater and sediment retention as well as encourage re-establishment of emergent and sub-aquatic vegetation in eroded areas (Folse, August 2003)

The Brady Canal Hydrologic Restoration Project (TE-28) is co-sponsored by the Natural Resource Conservation Service (NRCS) and the Office of Coastal Protection and Restoration (OCPR). The project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended and approved on the third Priority Project List.

II. Inspection Purpose and Procedures

The purpose of the annual inspection of the Brady Canal Hydrologic Restoration Project (TE-28) is to evaluate the constructed project features, identify any deficiencies, and prepare a report detailing the condition of the project features including recommendations for corrective actions, if needed. Should it be determined that corrective actions are needed, OCPR shall provide in the report, a detailed cost estimate for engineering, design, bidding, construction oversight and supervision, inspection, project contingencies, and an assessment of the urgency of such repairs (LDNR_CRD; Pyburn and Odom, 2002 OM&R Plan). The annual inspection report also contains a summary of the completed maintenance projects and final project costs and an estimated projected budget for the upcoming three (3) years for operations, maintenance and rehabilitation. The three (3) year projected operations and maintenance budget is shown in Appendix C. A summary of completed operation and maintenance projects are outlined in Section IV of this report.

An annual inspection of the Brady Canal Hydrologic Restoration Project (TE-28) was held on February 27, 2008. In attendance were Brian Babin and Shane Triche from the OCPR, Mr. Tim Allen with Apache Minerals Corporation and Mr. Buddy Smith with ConocoPhillips. Representatives with NRCS were invited but unable to attend due to late schedule conflicts. The annual inspection began at approximately 9:00 a.m. on the east side of the project area near Turtle Bayou and ended at 1:30 p.m. on the west end of the project area at the Apache Minerals Camp near the intersection of Bayou Penchant and Brady Canal.

The field inspection included a complete visual inspection of all constructed project features and earthen embankments along the boundary of the project area. Temporary benchmarks located on three (3) water control structures in Jug Lake were utilized to determine approximate water elevations at the time of the inspection. A hand held fathometer and GPS unit was used to measure water depths and mark low areas along rock dikes and earthen embankments. Photographs were taken at each structure (Appendix B – Photographs) and Field Inspection notes were completed in the field to record measurements and deficiencies (see Appendix D – Field Inspection Forms).

III. Project Description and History

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area receives freshwater and sediments which are provided by over-bank flow from Bayou Penchant, Little Carencro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge forms a barrier through the project area reducing the outflow of freshwater to the southern portion of the project area. Freshwater and sediment retention in the southern portion of the project area has diminished due to unimpeded through-flow and tidal exchange combined with a lack of freshwater introduction from the north (USDA/NRCS 1995). In addition, oilfield access canals extending from within the project area to the Bayou Decade levee ridge have also increased tidal exchange and provided direct routes for saltwater intrusion and reduced freshwater and sediment retention (USDA/NRCS 1995).

Major changes to the hydrology of the Penchant Basin, both natural and human induced, have resulted in a complex hydrologic setting (USDA/NRCS 1995). Under natural hydrologic conditions, the Penchant Basin is confined by natural levee ridges and is open to the west and southwest where it connects with the lower Atchafalaya River, Atchafalaya Bay, and Fourleague Bay. Historically, this hydrologic setting produced an estuarine system created by freshwater introduction in the upper basin and tidal exchange with the bays. Over time, hydrologic conditions in the Penchant Basin were altered by the construction of numerous canals, levees, local water management structures, and major public works projects. Some of the major projects that have contributed to the change in the hydrologic conditions of the basin are the Atchafalaya Basin Floodway, the Avoca Island levee along the lower Atchafalaya River, the Gulf Intracoastal Waterway (GIWW), the Bayou Chene, Boeuf, and Black Projects, the rock weir at Wax Lake, and the Houma Navigation Canal (USDA/NRCS 1995).

The objective of the Brady Canal Hydrologic Restoration Project is to maintain and enhance existing marshes in the project area by reducing the rate of tidal exchange and improve the retention of introduced freshwater and sediment (Folse T., 1998). Specific goals of the project are to (1) decrease the rate of marsh loss, (2) maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh, (3) decrease variability in water level within the project area, (4) decrease variability in salinities in the southern portion of the

project, (5) increase vertical accretion within the project area and (6) increase the frequency of occurrence of SAV within the project area. (Folse T., 1998)

The Brady Canal Hydrologic Restoration Project (TE-28) was completed in July 2000 and involved the installation of the following project features:

Site 6 – fixed crest weir with barge bay
Site 7 – rock plug
Site 10 – stabilization rock armored channel liner
Site 14 – fixed crest weir with variable crest section
Site 20 – stabilization rock armored channel liner
Site 21 – fixed crest weir with three (3) variable crest sections
Site 23 – fixed crest weir with two (2) variable crest sections
Site 24 – fixed crest weir
4,405 linear ft. – rock armored earth embankment
3,660 linear ft. – rock dike
8,531 linear ft. – Earthen embankment
Maintenance of existing over-flow banks (21,600 ft.)

IV. Summary of Past Operation and Maintenance Projects

General Maintenance: Below is a summary of maintenance projects and operation tasks performed since July 2000, the date the Brady Canal Hydrologic Restoration Project (TE-28) was completed.

Under Article II of the Brady Canal Hydrologic Restoration (TE-28) Project Cost Share Agreement, the landowners, ConocoPhillips, formerly Burlington Resources and Apache Minerals Corporation were granted in-kind service credits to repair existing earthen embankments within the project area. Below is a description of work and cost associated with the maintenance performed by landowners:

In Kind Service Credits

7/30/2007 – Apache Corporation contracted Dupre Brothers Construction, Inc. of Houma, La. to repair several breaches along the east bank of Jug Lake and reinforce earthen embankment tie-ins adjacent to variable crest weir structures #21, #23, and #24. The repairs were completed on 7/30/2008 at a total cost of $9,103.12

9/20/2006 - Apache Corporation contracted Frisco Construction Co. Inc. of Houma, La. to repair breaches and refurbish low areas of the spoil banks along the east bank of Jug Lake and embankment tie-ins adjacent to structures #21, #23 and #24. The repairs were completed on 9/20/2006 at a total cost of $9,265.

10/31/2003 - Apache Corporation contracted Berry Bros. General Contractors to completed 5,050 linear feet of levee refurbishment along the west bank of Jug Lake. The cost for the levee refurbishment including construction oversight was $34,284.87. Following the levee refurbishment, Shaw Coastal performed an as-built survey of the repairs at a cost of $5,100.60. The total project cost for this maintenance event was $39,385.47.

8/15/2003 – ConocoPhillips, formerly Burlington Resources, completed the repair of two (2) large breaches along Little Carencro Bayou following Hurricane Lili. The maintenance project was completed on 8/15/2003 at a total cost of $31,642.57, including construction oversight and administration.

10/21/2002 - Apache Corporation contracted Frisco Construction Co. to repair and restore the existing levee embankment along Turtle Bayou, Superior Canal, and along the west bank of Jug Lake. This work was completed at a total cost of $5,310,.

Brady Canal Breach Repair Project (2003) – LDNR: This maintenance project was completed on August 13, 2003 and included the installation of approximately 9,667 tons of broken stone riprap along the north bank of Bayou Decade, 2,325 linear feet of earthen breach repair and refurbishment along Turtle Bayou and Superior Canal, and replacement of a timber pile on the navigational aid structure at Weir 6. The cost associated with the engineering, design and construction of the Brady Canal Breach Repair Project is as follows:

Construction:	$471,329.65
Engineering & Design:	$ 54,473.00
Bidding:	$ 4,100.00
Construction Administration:	$ 8,020.00
Construction Oversight:	$ 49,635.00
As-built Survey and Drawings:	$ 12,873.00
Project Total:	$600,430.65

Structure Operations: In accordance with the operation schedule outlined in the Operation and Maintenance Plan, Structures #14, #21, and #23 have been operated twice annually beginning in April 2002. Below is a summary of costs incurred for structure operations:

03/02	Pyburn & Odom	$9,772.50
09/02	CEEC	$4,674.00
03/03	CEEC	$4,022.58
09/03	CEEC	$3,612.93
03/04	Shaw Coastal	$4,676.18
09/04	Shaw Coastal	$5,365.25
03/05	T. Baker Smith	$8,804.83

09/05	T. Baker Smith	$8,886.60
03/06	T. Baker Smith	$7,668.59
09/06	T. Baker Smith	$9,970.37
03/07	T. Baker Smith	$8,602.12
09/07	T. Baker Smith	$9,203.61
03/08	T. Baker Smith	$7,595.99

Navigational Aids Maintenance: During the operation and maintenance phase of the Brady Canal Hydrologic Restoration (TE-28) Project, the navigational aids at Structure 6 along Bayou Decade have been repaired on several occasions. Below are the dates and costs associated with the repair and maintenance of these navigation lights:

2/2007 – LDNR received bids for a state-wide maintenance contract for inspection, diagnostic testing and maintenance of twenty-seven (27) navigational aid systems at ten (10) separate locations throughout the state. Four (4) the twenty-seven (27) navigational aid structures are located at Structure 6 within the Brady Canal project area. The total cost of the state-wide maintenance contract is approximately $83,000 annually, with an option to extend the contract for an additional two (2) years. Inspections of the navigational aids at Structure 6 began in February 2007 under the current maintenance contract.

11/2003 – Ernest P. Breaux Electrical Inc. replaced 20 lamps, 4 – batteries, 1 – lamp changer, 1 – photo cell at structure 6. The cost for parts and labor to service these navigational aids was $4,132.30.

8/2002 - Automatic Power, Inc. of Larose, La. performed trouble shooting services to determine a schedule of parts requiring replacement – Cost: $465

8/2002 – B&B Electromatic of Norwood, La. repaired the navigation lights at structure 6 including parts and labor for a total cost of $2,039.

V. Inspection Results

Structure 6 – Fixed crest weir with barge bay

Structure 6 appeared to be in fair condition with severe to moderate damage to the timber pile bumper guard and the steel guard rail attached to the sheetpile wall on the west side of the barge bay entrance and the timber navigational aid pile supports on the south side (Bayou Decade). The batter piles on the two (2) timber navigation aid supports on the south side of the structure were off center and split down the middle. The steel cable wraps tying the timber pile cluster together were very loose. The timber bumper guard on the west side of the barge bay entrance was completely sheared and the guard rail bent. Apparently, barge equipment operated by the oil field service contractor managing the adjacent gas field is damaging the

timber pile cluster and bumper piles while accessing the barge bay. Tim Allen with Apache Minerals has agreed to discuss the damage with the oil field service contractor and request that the contractor facilitate repairs. Minor erosion was also noted on the west side of the structure where the sheetpile wall ties into the earthen embankment. It doesn't appear that breaching of the embankment is imminent; however, it is recommended that the earthen spoil bank in this area be refurbished on the next maintenance cycle. All navigation lights and signage appear to be in good condition. Automatic Power, Inc. of Larose has been maintaining the navigation lights under a maintenance contract with OCPR issued in February 2007. (Appendix B, Photos 1 through 5).

Structure 7 – Rock Plug

Structure 7 appeared to be in very good condition. There was no indication of settlement along the length of the rock plug. The inspection team agrees that this structure is in good condition and no maintenance will be required at this time. (Appendix B, Photo 6)

Structure 10 – Stabilization rock armored channel liner

The rip-rap lined channel along Voss Canal appeared to be in good condition with no indication of structure settlement. The warning signs and supports were also in good condition. (Appendix B, Photos 7 through 9).

Structure 14 – fixed crest weir w/ variable crest section

The variable crest weir structure located along the east bank of Bayou Carencro appeared to be in very good condition with only minor erosion noted on each side near the earthen embankment tie-ins. The signs, timber supports and structural components of Structure 14 were in good condition with no indication of damage or serious corrosion. All signs and supports were also in good condition (Appendix B, Photo 10).

At the time of the inspection, the stop logs were positioned at marsh elevation. The schedule structure operations for spring were completed in March 2008.

Structure 20 – Stabilization rock armored channel liner

Rock rip-rap channel liner located along the west bank of Jug Lake appeared to be in very good condition with no visual signs of settlement. The warning signs and timber pile supports were also in very good condition. The depth of water above the rock riprap at the center of the channel was approximately 6.1 to 6.5 feet. . With estimated water levels in Jug Lake of -0.25 NAVD at the time of the inspection, we have concluded that the crest of the rock riprap structure near the center of the channel was approximately -6.5' NAVD. The crest of the structure in this area was originally constructed to -4.75 NAVD, indicating that the structure has settled approximately 1.75' in the center of the channel. Prior to recommending maintenance or corrective actions, a survey profile of the structure should be conducted to confirm field measurements. (Appendix B, Photos 11 through 13)

Structure 21 – fixed crest weir w/ three (3) variable crest sections

The variable crest weir structure with three (3) stop log bays appeared to be in good condition with no visual damage, breaching or corrosion of the structural components. The earthen embankment tie-ins on both sides of the structure exhibited minor erosion with large cut banks on the south side. The channel guides used to lock the stop logs into position were not secured during the last operations event causing several of the top logs to float to the surface. A single stop log was recovered along the shoreline adjacent to the structure confirming that one or more stop logs may have floated out of the channel guides. Prior to the upcoming structure operations event in March 2008, an inventory of stop logs shall be taken to determine if any additional logs were lost. OCPR shall instruct the contractor performing operations that channel locks must be secured on all structures prior to demobilizing from the site. The earthen embankments adjacent to the structure were refurbished by Apache Minerals in July 2007 under their in-kind service contract with OCPR and are in good condition. (Appendix B, Photos 14 through 16)

Structure 23 – fixed crest weir w/ two (2) variable crest sections

The variable crest weir structure appeared to be in fair condition with no noticeable damage or corrosion of the structural components. We did observe moderate erosion on both sides of the structure near the earthen embankment tie-ins. Although the earthen embankment was refurbished in July 2007, large cut banks have reappeared on both sides of the structure. All signs and timber supports were in good condition. (Appendix B, Photos 17 and 18)

Structure 24 – fixed crest weir

The fixed crest weir located along the southeast bank of Jug Lake appeared to be in very good condition with no visual signs of corrosion or erosion of the earthen tie-ins. The earthen tie-ins were refurbished by Apache Minerals, Inc. in July 2007 and are holding up well. All signs and timber supports were also in good condition. (Appendix B, Photos 19 and 20)

Earthen Embankments

The inspection of earthen embankments consisted of a visual inspection of previously repaired breaches performed under the 2003 Brady Canal Breach Repair Project, levee refurbishment work performed by the landowners along the shoreline of Jug Lake and adjacent to water control structures along the banks of Jug Lake, as well as an inspection of existing embankments and overflow banks making up the boundary of the Brady Canal Hydrologic Restoration Project. Below are the results of the earthen embankment inspections:

Brady Canal Maintenance Project (2003)

Breach Repair 1 thru 4 - Breach 1 thru 4 consisted of the construction of a rock dike and breach closures along a low lying ridge on the south bank of Bayou Decade from Turtle Bayou to the mouth of Jug Lake. After reviewing photographs of the structure

before and after Hurricanes Katrina and Rita, it is apparent that tidal surges during the storm had resulted in moderate displacement of the rock riprap. Considering the rock displacement that has taken place, the dike remains in good to fair condition with only isolated locations where settlement was visible. (Appendix B, Photos 21 - 25)

Breach Repair 5 & 6 – Breach 5 & 6 consisted of the refurbishment of a low area along Turtle Bayou from the mouth of Superior Canal 1500' southward, utilizing dredge material obtained from the canal bottom of Turtle Bayou. The entire length of the refurbished levee appeared to be in good condition with only minor cut banks which had developed along the toe of the embankment. (Appendix B, Photo 26)

Breach Repair 7 – Breach 7 is located along an existing oilfield canal off of Superior Canal in the southeast section of the project area. Due to the depth of the opening in the earthen embankment, rock rip-rap was used to plug the breach and reinforce the adjacent bank line. The rock riprap breach closure appeared to be in very good condition with no visual signs of settlement or displacement. (Appendix B, Photos 27 - 28)

Breach Repair 8 – included the refurbishment of a 200 linear foot section of bank line along west bank of Superior Canal adjacent to an existing pipeline right-of-way. Dredge material obtained from channel bottom of Superior Canal was utilized to reinforce the existing bank. The earthen embankment in this area was in good condition with thick vegetation present. (Appendix B, Photos not available)

Breach Repair 9 – included approximately 250 linear feet of bank refurbishment along the southern end of Superior Canal on the south bank. This bank line was repaired using dredge material from Superior Canal. The earthen embankment in this area was in very good condition with no visible erosion or settlement of the embankment. (Appendix B, Photos not available)

Rock Armored Embankments

Rock armored embankments along the north bank of Bayou de Cade and Voss Canal appear to be in fair to good condition. The rock dike beginning at the intersection of Bayou Decade and Voss Canal to Structure 10 along the east bank of Voss Canal appeared to have settled slightly since construction. Although low, we did not observe any areas of the rock dike in which breaching or failure is imminent in the near future. OCPR will continue to monitor the condition of this structure on future field investigations. (Appendix B, Photos not available)

Existing Earthen Embankments and Overflow Banks

During the visual inspection of all earthen embankments and overflow banks which make up the boundary of the Brady Canal Hydrologic Restoration Project, we were able to identify four (4) locations where breaches have developed. Breach 1 is located along the east bank of Carencro Bayou near the intersection of Carencro Bayou and Little Carencro Bayou (Coordinates: N 29D 24' 12.4"; W 90D 59' 53.3") (Appendix B, Photos 30 - 31). Breach 2 is

located along the south bank of Little Carencro Bayou between the Carencro/ Little Carencro Bayou intersection and the Little Carencro/ Brady Canal intersection (Coordinates: N29D 24' 26.9"; W 90D 59' 23.4") (Appendix B, Photo 32). Breach 3 and 4 are located along Brady Canal near the intersection of Brady Canal and Little Carencro Bayou (Breach 4 coordinates: N 29D 24' 27.7"; W 90D 58' 56.0") (Appendix B, Photos 33). Breach 3 is located at the beginning of Brady Canal adjacent to an existing wooden bulkhead at the head of an old oilfield access channel. The breach was determined to be approximately 15' wide and 8 feet deep around the end of the bulkhead with a head difference around 1 ft. at the time of the inspection (Appendix B; Photos 34). Breach 5 was located along the southern bank of Brady Canal between Carencro Bayou and Bayou Penchant and appeared to be approximately 40' wide (Appendix B, Photos 35 - 36). A map showing the locations of all breaches identified during this inspection is shown in Appendix E.

Other Maintenance Issues

OCPR has received four (4) complaints from boaters in the area regarding boat motor damage as a result of an underwater obstruction below the water surface along the north bank of Bayou Decade between Turtle Bayou and Jug Lake. Each complaint indicated that as they were traveling Bayou Decade they struck an underwater obstruction, presumably large rocks below the water surface, causing damage to there outboard motors. At least one (1) of the boaters was able to provide an approximate location of the underwater obstruction. OCPR field personnel visited the site to investigate and found a small 2 feet diameter patch of rocks (2 or 3 large stones) below the water surface in the vicinity of the reported incident. This location was approximately 20 to 25 feet from the bank in 1 foot of water at the time of the investigation. A 50 linear feet section of Bayou Decade was marked with PVC pipes and ribbon to notify boaters of possible underwater obstruction. Each individual was asked to provide OCPR a written statement including dates, type of boat, travel speed, size of motor, description of damage and any other information and photos that would assist in assessing the damages. To date, only one individual has submitted the information requested by OCPR. This claim was reported to the risk management section of OCPR for further investigation. OCPR will continue to monitor this area until corrective action can be taken.

VI. Conclusions and Recommendations

Overall, the project features appeared to be in good condition with only isolated breaching along Carencro Bayou, Little Carencro Bayou and Brady Canal, moderate erosion of the earthen embankment tie-ins adjacent to Structures 6, 21 and 23 and structural damage to the timber bumper guard and navigational aid supports at Structure 6. In regards to the breaching of the overflow banks and erosion along the embankment tie-ins, it is recommended that these locations be repaired and/or refurbished using dredge material from the adjacent channels and bays. In the past, the landowner has been reimbursed in-kind service credits for maintaining the earthen embankments and overflow banks on their respective properties. From discussions with the landowners and the federal sponsor, there appears to be consensus between all parties that the landowner's participation in maintaining the earthen boundaries of the project has

provided a timely response to project deficiencies as well as a substantial cost savings. With the cooperation of both landowners, it is recommended that earthen embankment and overflow bank maintenance continue to be handled through the in-kind service agreement established in the cost share agreement. In the case of the structure damage to the timber bumper guard and timber navigational aid supports, we recommend that the timber bumper guard on the west side of the barge bay entrance be replaced. Since we are fairly certain that the damage was caused by equipment belonging to the oilfield service contractor, Mr. Tim Allen with Apache Minerals has agreed to discuss the damage with the contractor and request that they facilitate repairs to the timber bumper guard. If this approach is unsuccessful, we recommend that the repairs be included in the next maintenance cycle for the Brady Canal project. At this time, we do not recommend replacing the timber cluster piles supporting the navigation aid system on the south side of Structure 6 since structural failure is not imminent. However, on the next maintenance cycle, we are recommending that the stainless steel cables tying the timber cluster pile together be tightened and secured.

During discussions with Mr. Tim Allen, general manager of Apache Louisiana Minerals, Inc., regarding structure operations, he indicated that their corporation would be interested in assuming the responsibility of operating the water control structures associated with the Brady Canal Project. With concurrence for NRCS, a scope of services was prepared by OCPR requesting a cost proposal from Apache Minerals for the operation of structures 14, 21 and 23, twice annually. The cost proposal submitted by Apache to complete this work in accordance with terms of the scope of services is $12,000, annually. LDNR is currently drafting a sole-source contract for Apache Minerals to begin structure operations, anticipated to begin in September 2008.

The three (3) year operations and maintenance budget from year 2008 through 2011 under Appendix C outlines the recommendations for maintenance and repairs based on the 2008 annual inspection. The recommended maintenance includes biannual structure operations, annual navigational aid inspections, diagnostic testing and repairs, and routine breach repairs and levee refurbishment of overflow banks.

References:

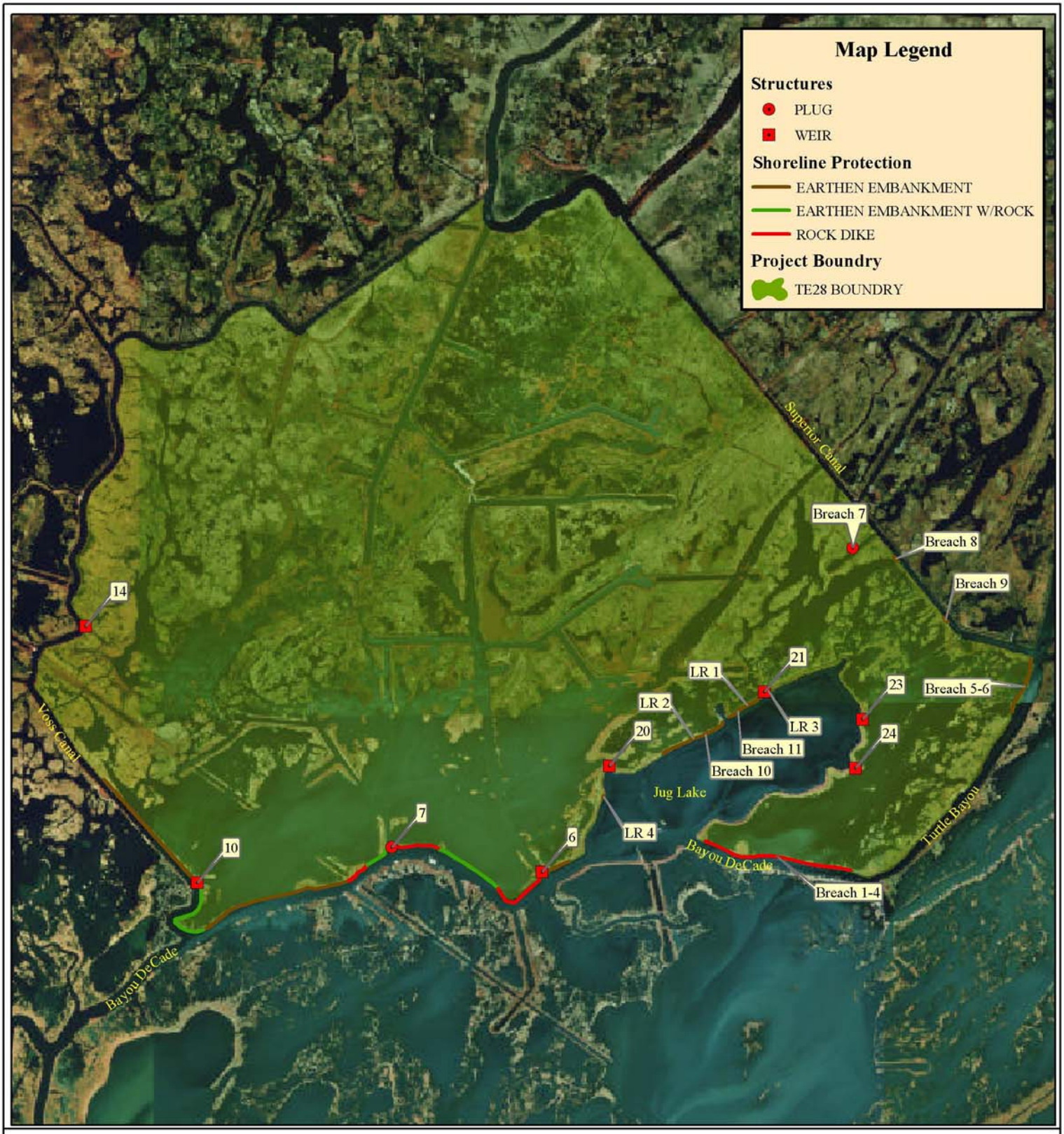
Folse, T. August 2003. Monitoring Plan for the Brady Canal Hydrologic Restoration Project (TE-28), Louisiana Department of Natural Resources, Coastal Restoration Division, 16pp.

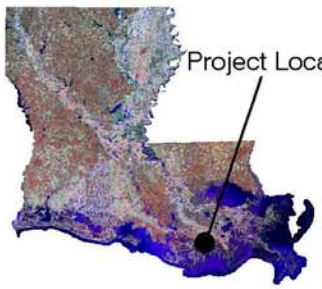
Louisiana Department of Natural Resources – Coastal Restoration Division and Pyburn and Odom, Inc. 2002. Operation, Maintenance and Rehabilitation Plan for the Brady Canal Hydrologic Restoration Project (TE-28)

United States Department of Agriculture – Natural Resources Conservation Service 1995. Project Plan and Environmental Assessment for the Brady Canal Hydrologic Restoration Project.

Appendix A

Project Features Map





TE28 - Brady Canal Hydrologic Restoration

PROJECT FEATURES MAP

0 1 2 Miles

0 1.5 3 Kilometers

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Data Source:

LA Dept. Natural Resources
Coastal Engineering Division
Thibodaux Field Office

1998 DOQQ AERIAL

Date: March 2, 2005

Map ID: 2005-TFO-010

Appendix B

Photographs

Photo No. 1 – southern end of the fixed crest weir and barge bay (Structure 6) located along the north bank of Bayou Decade. The timber pile supported navigational aid is also shown in this photo.

Photo No. 2 – view of damaged timber pile supports for navigational aid structure on the southwest side of Structure 6. The alignment of the three (3) batter piles has shifted exposing the center vertical support.

Photo No.3 – view of timber pile support and navigational aid structure on the southeast side of Structure 6. The alignment of the batter piles has also shifted exposing the vertical support pile.

Photo No.4 – view of timber pile support and navigational aid structure on the northwest side of Structure 6.

Photo No.5 – view of timber pile support and navigational aid structure on the northeast side of Structure 6.

Photo No.6 – view of the rock rip rap plug (Structure 7) located along the north bank of Bayou Decade west of Structure 6.

Photo No.7 – south bank of rock channel liner (Structure 10) located along the east bank of Voss Canal.

Photo No.8 – north bank of rock channel liner (Structure 10) located along the east bank of Voss Canal.

Photo No. 9 – timber sign supports and rock channel liner of Structure 10 looking northeast.

Photo No.10 – variable crest weir structure (Structure 14) located along the east bank of Little Carencro Bayou.

Photo No.11 – northern end of rock channel liner (Structure 20) located along the southwest bank of Jug Lake.

Photo No.12 – southern end of rock channel liner (Structure 20) located along the southwest bank of Jug Lake.

Photo No.13 – view of rock channel liner, timber piles and signage of Structure 20.

Photo No. 14 – sheet pile wall tie-in to earthen embankment, timber pile support and signage on the north side of variable crest weir (Structure 21) located on the northwest bank of Jug Lake.

Photo No. 15 – sheet pile wall tie-in to the earthen embankment, timber support and signage on the south side of variable crest weir (Structure 21) located on the northwest bank of Jug Lake.

Photo No.16 – view of three (3) bay variable crest weir (Structure 21) located on the northwest bank of Jug Lake.

Photo No.17 – tie-in to earthen embankment on the north side of the variable crest weir (Structure 23) located on the northeast bank of Jug Lake.

Photo No.18 – view of two (2) bay variable crest weir (Structure 23) located along the northeast bank of Jug Lake.

Photo No. 19 – view of the earthen embankment tie-in on the south side of the fixed crest weir (Structure 24) on the southeast bank of Jug Lake.

Photo No. 20 – view of the earthen embankment tie-in on the north side of fixed crest weir (Structure 24) along the southeast bank of Jug Lake.

Photo No. 21 – rock dike revetment (Breach Repair 1 through 4) along north bank of Bayou Decade between Turtle Bayou and Jug Lake installed in 2003.

Photo No. 22 – rock dike revetment (Breach Repair 1 through 4) along northern bank line of Bayou Decade between Turtle Bayou and Jug Lake installed in 2003.

Photo No. 23 – rock dike revetment along Bayou Decade between Turtle Bayou and Jug Lake installed in 2003. PVC pipe with flagging serves as a marker for underwater obstruction (rocks) reported in early 2008.

Photo No. 24 – rock dike revetment along north bank of Bayou Decade between Turtle Bayou and Jug Lake installed in 2003. Two (2) PVC markers installed to notify boaters of reported rocks below water surface in early 2008.

Photo No. 25 –rock dike revetment along Bayou Decade near entrance to Jug Lake installed in 2003.

Photo No. 26 – earthen embankment along Turtle Bayou (Breach Repair 5 and 6) near Superior Canal refurbished in 2003.

Photo No. 27 – rock dike plug (Breach Repair No.7) along oilfield canal off of Superior Canal to the west installed in 2003.

Photo No. 28 – rock dike plug closure (Breach Repair 7) along oilfield canal off of Superior Canal to the west completed in 2003.

Photo No. 29 – view of moderate erosion near the end of rock revetment along Bayou Decade west of Structure 6.

Photo No. 30 – breach location along the east bank of Little Carencro Bayou (Coordinates: N 29d 24’ 12.4”; W 90d 59’ 53.3” NAD83)

Photo No. 31 – breach location along the east bank of Little Carencro Bayou (Coordinates: N 29d 24’ 12.4”; W 90d 59’ 53.3” NAD 83)

Photo No. 32 – breach location along the east bank of Little Carencro Bayou (Coordinates: N 29d 24’ 26.9”; W 90d 59’ 23.4” NAD 83)

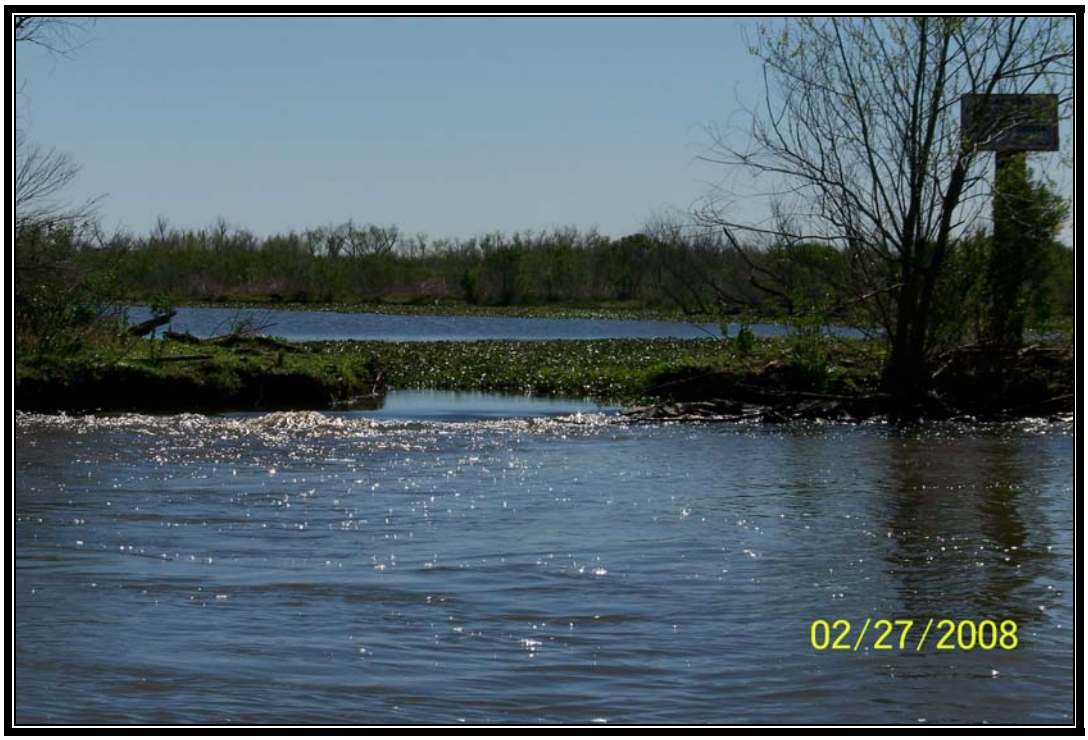


Photo No. 33 – Breach location along the southern bank of Brady Canal near the intersection of Brady Canal and Carencro Bayou within an existing pipeline right-of-way.

Photo No. 34 – Breach location along the south bank around an existing timber bulkhead at the intersection of Brady Canal and Carencro Bayou behind a house boat.

Photo No. 35 – Breach location located along the south bank of Brady Canal (Coordinates: N 29d 24’ 26.9”; W 90d 58’ 56.0” NAD 83)

Photo No. 36 – Breach location located along the south bank of Brady Canal (Coordinates: N 29d 24’ 26.9”; W 90d 58’ 56.0” NAD 83)

Appendix C

Three Year Budget Projection

Brady Canal/ TE-28 / PPL 3

Three-Year Operations & Maintenance Budgets 07/01/2008 - 06/30/11

Project Manager	O & M Manager	Federal Sponsor	Prepared By
	Brian Babin	*NRCS*	*Brian Babin*

	2008/2009	2009/2010	2010/2011
Maintenance Inspection	$ 5,569.00	$ 5,736.00	$ 5,908.00
Structure Operation	$ 12,000.00	$ 12,000.00	$ 12,000.00
Administration	$7,000.00	$ 7,000.00	$ 7,000.00
Maintenance/Rehabilitation			

08/09 Description: Routine Breach Repair, Levee Refurbishment and Navigational Aid inspection and maintenance

E&D	$0.00		
Construction	$52,500.00		
Construction Oversight	$3,000.00		
Sub Total - Maint. And Rehab.	$ 55,500.00		

09/10 Description: Routine Breach Repairs, Levee Refurbishment and Navigational Aid inspection and maintenance

E&D		$ -	
Construction		$ 55,125.00	
Construction Oversight		$ 3,000.00	
	Sub Total - Maint. And Rehab.	$ 58,125.00	

10/11 Description: Routine Breach Repairs, Levee Refurbishment and Navigational Aid Inspection and Maintenance

E&D			$ -
Construction			$ 57,881.00
Construction Oversight			$ 3,000.00
		Sub Total - Maint. And Rehab.	$ 60,881.00

	2008/2009	2009/2010	2010/2011
Annual O&M Budgets	$ 80,069.00	$ 82,861.00	$ 85,789.00

O &M Budget (3 yr Total)	**$248,719.00**
Unexpended O & M Funds	**$294,066.73**
Remaining O & M Budget (Projected)	**$45,347.73**

Note: 2008-2011 Unexpended O&M budget includes a deduction of $94,083 for MIPR O&M funds allocated for NRCS (see attached worksheet for 08-11 accounting)

OPERATIONS & MAINTENANCE BUDGET WORKSHEET

Project: TE-28 Brady Canal Hydrologic Restoration

FY 08/09 –

Administration		$ 7,000*
O&M Inspection & Report		$ 5,569
Operation:		$ 12,000**
Maintenance:		$ 55,500
E&D:	$ 0	
Construction:	$ 52,500***	
Construction Oversight:	$ 3,000****	

Operation and Maintenance Assumptions:

Structure Operations: 3 – structures are operated twice annually by Apache Minerals for a total of $12,000**. LDNR Administration: $3,000*

Navigational Aid inspection, maintenance and repairs: $5,000***

Routine Breach Repairs by Landowners:

Breach Repair and Levee Refurbishment:

Mobilization:	$10,000
Breach Repairs:	$30,000
(1,200 linear ft. @ $25/ ft.)	
Contingency (25%)	$ 7,500
	$47,500***
Construction Oversight:	$ 3,000****
(Burlington Resources)	
LDNR Administration:	$ 2,500*
NRCS Administration:	$ 1,500*
Overall Project Cost:	**$54,500**

FY 09/10 –

Administration		$ 7,000*
O&M Inspection & Report		$ 5,736
Operation:		$ 12,000**
Maintenance:		$ 58,125
E&D:	$ 0	
Construction:	$ 55,125***	
Construction Oversight:	$ 3,000****	

Operation and Maintenance Assumptions:

Structure Operations: 3 – structures are operated twice annually by landowner for a total $12,000**, LDNR Administration: $3,000*
Routine Breach Repairs and Levee Refurbishment: 52,500*** x 5% inflation = $55,125,
Construction Oversight: $3,000**** (See Fy07/08)
LDNR Admin: $2,500*, NRCS Admin: $1,500* (See FY 07/08)
Navigational Aid inspection, maintenance and repairs: $5,000***

It is anticipated that routine earthen breach repairs and navigation lights maintenance will be required during the fiscal year. The cost for breach repairs and levee refurbishment is based on in-kind service credits to the landowner. Cost breakdown shown in FY 06/07.

FY 10/11 –

Administration		$ 7,000*
O&M Inspection & Report		$ 5,908
Operation:		$ 12,000**
Maintenance:		$ 60,881
E&D:	$ 0	
Construction:	$ 57,881***	
Construction Oversight:	$ 3,000****	

Operation and Maintenance Assumptions:

Structure Operations: 3 – structures are operated twice annually by landowner for a total $12,000**, LDNR administration: $3,000*
Routine Breach Repairs and Levee Refurbishment: 55,125*** x 5% inflation = $57,881,
Construction Oversight: $3,000**** (See Fy07/08)
LDNR Admin: $2,500*, NRCS Admin: $1,500* (See FY 07/08)
Navigational Aid inspection, maintenance and repairs: $5,000***

It is anticipated that miscellaneous earthen breaches and navigation lights will have to be repaired during the fiscal year. The cost above is based on in-kind service credits to the landowner for repair of breaches.

2008-2011 Accounting

Unexpended funds from Lana Report:	$ 415,325.49
FY08 Expenditures by LDNR	$ -27,175.76
MIPR O&M for NRCS	$ -94,083.00
Estimated Unexpended Funds:	$ 294,066.73

Appendix D

Field Inspection Form

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 6

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Fixed Crest Weir w/ Barge Bay

Water Level: N/A

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Fair	pipe rail bent on west side of barge bay opening		1 thur 5	**Observations:**
Earthen Wingwalls	Good				Structure No.6 appeared to be in good condition with moderate damage to timber piles protecting the steel bulkhead on the west side of the barge bay and two (2) timber piles supporting the navigational aids on the south side of structure No.6.
Stop Logs Bays timbers, locks hoist etc.					Slight erosion was noted on the west side of the steel sheet pile wall at the earthen embankment tie-in.
Handrails Grating Hardware etc.					Batter piles on the two (2) navigational aid structures on the south side of structure No.6 were split down the middle and off center due to marine barge traffic colliding with the structure while accessing the barge bay. It doesn't appear that there is
Timber Piles	Good	Timber Piling west side of barge bay missing			iminent danger of the timber pile structures failing in the current condition. LDNR will continue to monitor the condition of these timber structures. Tim Allen indicated that he will discuss the damage with the oil field service contractor operating the gas field and solicite a commitment from the contractor to repair the structure.
Timber Wales					
Galv. Pile Caps	Fair	several caps missing			Automatic Power, Inc. of Larose is currently operating and maintaining the navigational aids through a maintnenance/services contract with LDNR. No damage or inoperable navigation lights have been reported since the maintenance contract went into effect in February 2007.
Cables	Fair	loose on the 2 piling on south side.			
Signage /Supports	Good				**Structure Description:** 244 linear ft. steel sheetpile fixed crest weir structure with a 70 ft. wide barge bay crossing an oilfield canal on the north side of Bayou Decade west of Jug Lake.
Rock Embankment					The mudline of the 70 ft. wide barge bay is set at an elevation of -0.5 ft. The fixed crest section is set at elevation +0.5 ft. NAVD. The steel sheetpile sections tie into the existing earthen embankment which is constructed to an elevation of +4.0 ft. NAVD.
Eathern Embankment					on each side of the structure. Two (2) batter dolphin piles with navigational aids are located on each side of the structure. Navigational aids include solar powered navigation lights with battery backup and aluminum warning signs attached to batter piles.
Rock Armored					
Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 7

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Rock Plug

Water Level : N/A

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	N/A			6	**Observation:**
Earthen Wingwalls	N/A				The rock plug was in very good condition with no obvious signs of settlment or displacement of rock rip-rap along the length of the rock plug.
Stop Logs Bays timbers, locks hoist etc.	N/A				Signs and supports are also in good condition.
Handrails Grating Hardware etc.	N/A				
Timber Piles	N/A				
Timber Wales	N/A				
Galv. Pile Caps	N/A				
Cables	N/A				
Signage /Supports	Good				
Rock Embankment	Very Good				**Structure Description:** 415 linear ft. rock riprap plug (approximately 6,000 tons of riprap installed) across as oil field access canal on the north side of Bayou Decade wet of Site 6. The top of the riprap plug is was constructed to an elevation of +4.0' NAVD which corresponds to the
Eathern Embankment	N/A				earthen embankment on each side to the structure. Aluminum warning signs are located in front of the structure along Bayou Decade.
Rock Armored					
Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 10

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Rock Armored Channel Lining

Water Level: N/A

Type of Inspection: Annual

Weather Conditions: Sunny and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	N/A			7 thru 9	The rock lined channel section appeared to be in good condition with no visual signs of settlement or structural damage. The earthen embankment tie-ins also appeared to be in good condition.
Earthen Wingwalls	N/A				
Stop Logs Bays timbers, locks hoist etc.	N/A				All signs and supports were also in good condition.
Handrails Grating Hardware etc.	N/A				
Timber Piles	Good				
Timber Wales	N/A				
Galv. Pile Caps	N/A				
Cables	N/A				
Signage /Supports	N/A				
Rock Embankment	Good				**Structure Description:** 275 ft. x 45 ft. wide rock riprap channel liner three (3) feet minimum thickness lining the opening of a interior channel located on the west end of Bay Long intersecting Voss Canal. Aluminum warning signs attached to timber piles are located on both sides of the structure.
Eathern Embankment	N/A				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 14

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Fixed Crest Weir w/ Adjustable Stoplogs

Approx. Water Level:

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	None	minor paint chipping	10	Minor erosion was noted on the earthen embankment tie-ins on both sides of the structure. the embankment in this area appear to be stable with no iminent breaching
Earthen Wingwalls	Fair				The steel structure and bulkhead was in good condition with only minor flaking of paint on the hand rails. All stop logs were in place at the time of the inspection The stop logs are scheduled for removal in mid-March.
Stop Logs Bays timbers, locks hoist etc.	Good				Us the temporary bench mark on the steel bulkhead, it was determined that the water elevation was +0.7' NAVD.
Handrails Grating Hardware etc.	Good				Variable crest weir elevation was -1.0' NAVD. TBM elev. 3.57' NAVD
Timber Piles	N/A				Rod Reading: 3.50' Water Elevation: +0.7' NAVD
Timber Wales	N/A				
Galv. Pile Caps	Good				
Cables	N/A				
Signage /Supports	Good				**Structure Description:** 82 linear ft. steel pile fixed crest weir with a six (6) ft. wide variable crest weir structure. This structure consist of 36 ft. fixed crest weir structure (18 ft. on each side of the stop log bay) set at an elevation of 1.0 ft. BML. The six (6) ft. wide variable crest section contains 10 - 4" x 6" stop logs, steel channel guides, locking channels and locks, steel grating walkways, handrails, etc. Aluminum warning signs are located adjacent to structure.
Rock Embankment	N/A				
Eathern Embankment	significant cut banks				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 20

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Rock Armored Channel Liner

Water Level: N/A

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	N/A	None	N/A	11 thru 13	
Earthen Wingwalls	N/A				**Observation:**
Stop Logs Bays timbers, locks hoist etc.	N/A				The rock rip rap lined channel was in good condition with no visual signs of damage or settlement of the rock structure. All signs and timber supports were also in good condition. Measurements taken with a hand-held fathometer revealed that the depth of water above the rock channel liner at the center of the structure was approximately
Handrails Grating Hardware etc.	N/A				6.5' to 6.7'. Using an approximate elevation determined from TBM on Structure No.23, we estimated that the elevation of the rock liner at the center of the channel was approximately -6.95' NAVD. The as-built elevation of the rock liner was -4.75' NAVD88
Timber Piles	Good				Although there was no visual signs of settlement above the water surface, we feel that settlement has occurred on the channel bottom.
Timber Wales	N/A				Water elevation based on Structure No. 23: -0.25' NAVD Measured depth: 6.7' Estimated elevation of channel liner: -6.95' NAVD
Galv. Pile Caps	Good				Based on field measurements and as-built drawings, the rock lined channel has settled approximately 2.2'. To obtain a more accurate account of settlment, a profile survey will be required.
Cables	N/A				
Signage /Supports	Good				**Structure Description:**
Rock Embankment	Good	possible settlement on channel bottom			180 ft. x 48 ft. wide loose rock riprap channel lining placed 3 ft. minimum thickness, lining the opening of the canal at the northwest corner of Jug Lake connecting the interior marsh. Aluminum waring signs supported by timber piles are located on both sides of the structure.
Eathern Embankment	N/A				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 21

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Fixed Crest Weir w/ Adjustable Stoplogs

Approx. Water Level :

Type of Inspection: Annual

Weather conditons: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	Paint chipping	None	14 thru 16	
Earthen Wingwalls	Fair	refurbished 7-Jul			**Observation:** The three (3) bay variable crest weir structure appeared to in good conditon. Minor erosion and large cut banks were noted at the earthen wingwall tie-ins on both sides of the structure. Stop logs were in the raise position. We did notice that the guide channels locking the stop logs into position was not secure. At least one (1) log floated away and was recovered along the bank of the structure. An inventory of logs shall be taken when the logs are removed in March 2008.
Stop Logs Bays timbers, locks hoist etc.	Good				
Handrails Grating Hardware etc.	Good	paint chipping			The landowner, Apache Minerals, Inc., has indicated a willingness to begin performing structure operations for the Brady Canal Project. LDRN will follow-up with further discussions and negotiations regarding landowner operations.
Timber Piles	Good				All signs and supports were in good condition.
Timber Wales	Good				
Galv. Pile Caps	Good				
Cables					
Signage /Supports	Good				**Structure Description:**
Rock Embankment	N/A				100 linear ft. steel sheet pile fixed crest weir with three (3) - 6 ft. wide variable crest sections. Each variable crest sections contains 10 stop logs each measuring 4" x 6" timbers. The variable crest sections can be adjusted from 1.0 ft. BML to 5.0 ft. BML. The sheet pile structure ties into a 15 ft. wide earthen embankment section on each side of the structure. Aluminum warning signs attached to round timber piles are located on each side in front of the structure.
Eathern Embankment	N/A				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 23

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Fixed Crest Weir w/ Adjustable Stoplogs

Approx. Water Level : N/A

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	Paint chipping	None	17 and 18	
					Observation:
Earthen Wingwalls	Fair	repaired 7-Jul	N/A		The two (2) bay variable crest weir structure was in good condition with moderate erosion along the earthen wingwalls on both sides of the structure. Although the earthen embankment in this area was recently refurbished by the landowner in July 2007, high energy wave action in the Jug Lake continue to present erosion
Stop Logs Bays timbers, locks hoist etc.	Good				problems at earthen tie-ins of these structures. In the future, a rock rip-rap blanket on each side of the structure may be required to slow erosion.
Handrails					All signs and timber supports were in good condition.
Grating Hardware etc.	Good				
Timber Piles					Based on field measurement based on the temporary benchmark on the steel sheet wall, it was determined that the water elevation in Jug Lake at the time of this
	Good				inspection was -0.25' NAVD.
Timber Wales					TBM elevation: +3.51' NAVD
	Good				measurement from top of TBM to water: 3.75'
					Calculated water elevation: -0.25' NAVD
Galv. Pile Caps					
	Good				
Cables					
Signage /Supports	Good				**Structure Description:**
					100 linear ft. steel sheet pile fixed crest weir with two (2) - 6 ft. wide variable crest sections. Each variable crest sections contains 10 stop logs each measuring 4" x 6" timbers. The variable crest sections can be adjusted from 1.0 ft. BML to 5.0 ft. BML. The sheet pile structure ties into a 15 ft. wide earthen embankment section on each side of the structure. Aluminum warning signs attached to round timber piles are located on each side in front of the structure.
Rock Embankment	N/A				
Eathern Embankment	N/A				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No. Site 24

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Fixed Crest Weir

Water Level:

Type of Inspection: Annual

Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Steel Bulkhead / Caps	Good	Paint chipping		19 and 20	
Earthen Wingwalls	good	recently repaired			The fixed crest weir structure appeared to be in very good condition. The recently (7/07) refurbished earthen wingwalls were in good condtion with minor erosion of the earthen embankment.
Stop Logs Bays timbers, locks hoist etc.	N/A				Minor corrosion and paint chipping of the steel bulkhead and steel railing
Handrails					All signs and supports are in good condition.
Grating Hardware etc.	Good				
Timber Piles					
	Good				
Timber Wales					
	N/A				
Galv. Pile Caps					
	Good				
Cables					
	N/A				
Signage /Supports	Good				
Rock Embankment	N/A				**Structure Description:** 140 ft. steel pile fixed crest weir located adjacent to the southeast corner of Jug Lake. The structure consists of a fixed crest steel sheet pile weir with 60' section set at +4.0'. elev., 30' section set at +1.5' elev., and 50' section set at -03' elev. On either side of the structure is a 15 linear ft. wide earthen wingwall sections construction to +4.0'. NAVD88 to tie into the existing earthen embankments. Aluminum warning signs are set at either side of the 50 linear ft. sections of sheet piling and are supported by timber piles.
Eathern Embankment	N/A				
Rock Armored Earthen Embankment	N/A				

MAINTENANCE INSPECTION REPORT CHECK SHEET

Project No. / Name: **TE-28 Brady Canal Hydrologic Restoration**

Date of Inspection: February 27, 2007

Structure No.

Inspector(s): B. Babin, S. Triche, O. Smith, T. Allen

Structure Description: Earthen Embankments

Water Level Inside: N/A Outside: N/A

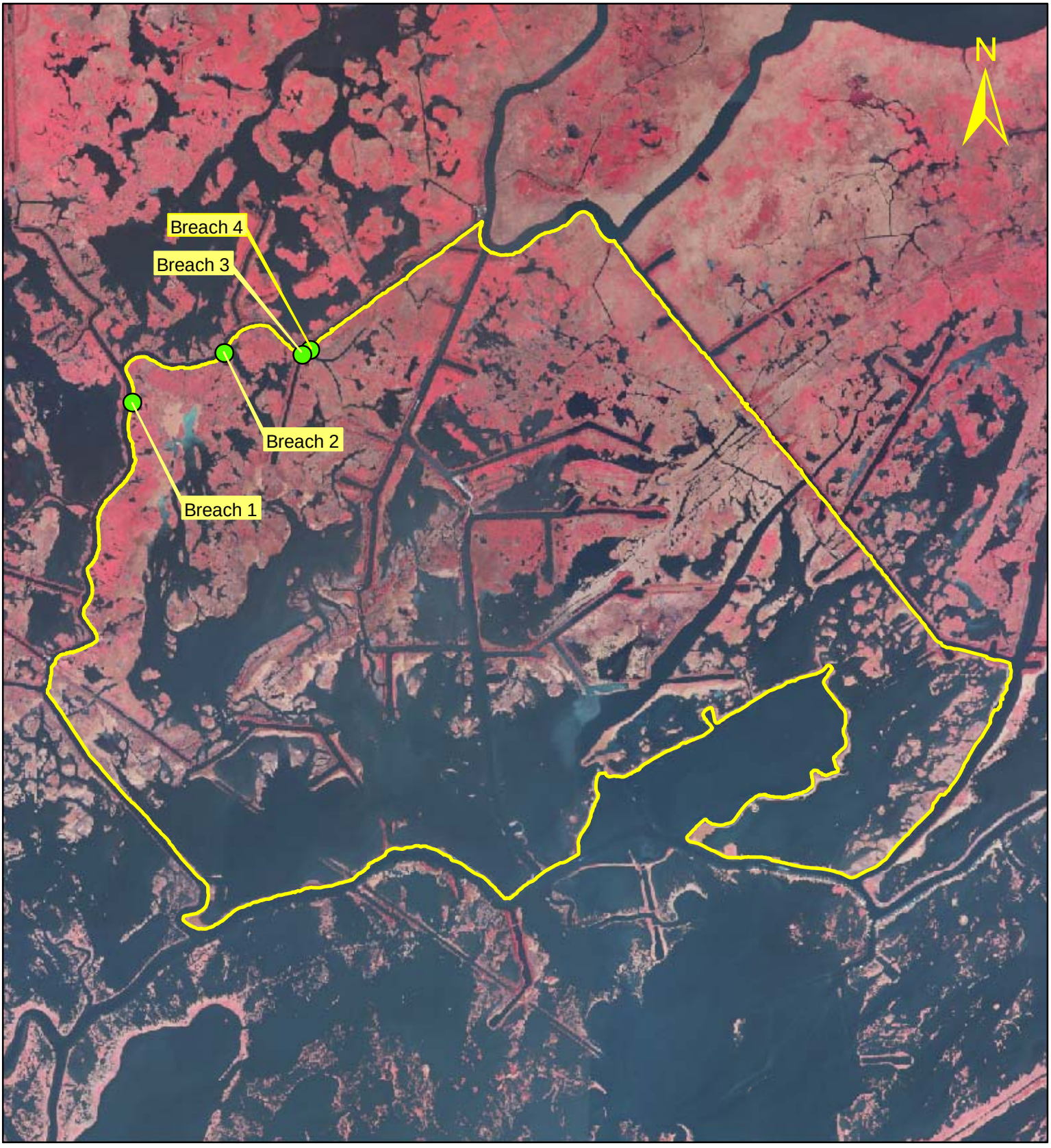
Type of Inspection: Annual

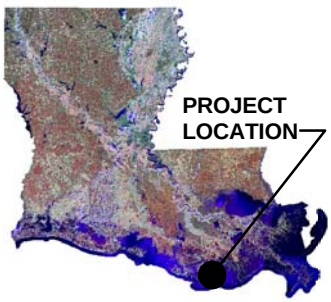
Weather Conditions: Clear and Cool

Item	Condition	Pysical Damage	Corrosion	Photo #	Observations and Remarks
Earthen Embankment	Good	slight cut bank	N/A	21 & 23	Breach Repair 8 - levee refurbishment along Superior Canal appeared to be in good condition with a slight cut bank noticed along the front face to the embankment. Levee width and elevation was good and vegetation was thick and plentiful. The repaired section of levee completed in 2003 appreared to have settled some from elevation differences in the refurbished section and the adjacent levee not repaired.
Earten Embankment	Good	slight cut bank	N/A		Breach Repair 9 - the earthen embankment repair along Superior Canal appeared to be in good condition with only minor erosion and cut banks along the front face.
				22 & 23	Breach Repair 7 - rock channel plug in good condition with no settlement.
Earthen Embankment	Good	slight cut bank	N/A	21	Breach Repair 5 & 6 - The earthen embankment repair along Turtle Bayou near the intersection of Superior canal was in good condition with moderate erosion and cut banks on the front face. No noticeable settlement.
Armored Embankment	Good			24 thru 28	Breach Repair 1 through 4 - rock dike along north bank of Bayou Decade between Turtle Bayou and Jug Lake was is fair condition. Some sections of the rock rip rap dike were displaced during the hurricanes Katrina and Rita. The rock dike has settled slightly in isolated locations but is still effective in protecting the north bank of the bayou.
					Newley discovered low areas and breaches
					Three breaches were identified along Carencro Bayou, Little Carencro and Brady Canal. These breach have been noted and shall be repaired under the landowner in-kind services agreement when equipment becomes available.
					Below are the coordinates of breaches discovered along Bayou Carencro, Brady Canal and Little Carencro Bayou:
					Breach 1 - N 29d 24' 12.4" W 90d 59' 53.3"
					Breach 2 - N 29d 24' 26.9" W 90d 59' 23.4"
					Breach 3 - N 29d 24' 27.7" W 90d 58' 56.0"
					A breach around an existing bulkhead located at the intersection of Carencro Bayou and Brady Canal near an existing camp location. The breache was approximately 8' deep and 5' wide.

Appendix E

Earthen Embankment Breach Locations





TE-28 BRADY CANAL HYDROLOGIC RESTORATION

2008 ANNUAL INSPECTION

0 0.5 1 2 Miles

0 500 1,000 2,000 3,000 Meters

Legend

Project Boundary

IMAGE: 2005 DOQQ

DATE: March 13, 2004